AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
J	1 | 3

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO.(If applicable)
0002	19-Aug-2004	W81LJ8-4052-8189	

6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than item 6)	CODE
USAED, WILMINGTON -(910)251-4424 ATTN: DANNY R KISSAM 69 DARLINGTON AVE WILMINGTON NC 28403	W912PM	See Item 6	

8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)		
	X	9A. AMENDMENT OF SOLICITATION NO. W912PM-04-B-0004
	X	9B. DATED (SEE ITEM 11) 29-Jul-2004
		10A. MOD. OF CONTRACT/ORDER NO.
		10B. DATED (SEE ITEM 13)
CODE / FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer [ ] is extended, [X] is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods:
(a) By completing Items 8 and 15, and returning 2 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted;
or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS.
IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

[ ] A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

[ ] B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).

[ ] C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

[ ] D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor [ ] is not, [ ] is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

W912PM-04-B-0004, WILMINGTON HARBOR MAINTENANCE DREDGING, BALDHEAD-CASWELL CHANNEL THRU BALDHEAD SHOAL CHANNEL, BRUNSWICK COUNTY, NORTH CAROLINA IS AMENDED AS FOLLOWS:

See Attached Summary of Changes

THE TIME AND DATE FOR BID OPENING REMAINS UNCHANGED.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) TEL: EMAIL:	
15B. CONTRACTOR/OFFEROR _____ (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)	16C. DATE SIGNED 19-Aug-2004

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

SECTION 00010 - SOLICITATION CONTRACT FORM

The following have been modified:
TOTAL AMOUNT

TOTAL AMOUNT OF LINE ITEMS 0001 – 0004 **$_____**

NOTICE TO ALL POTENTIAL BIDDERS

TO BE CONSIDERED RESPONSIVE THE FOLLOWING INFORMATION SHALL BE SUBMITTED ALONG WITH YOUR COMPANY'S BID DOCUMENTS.

(1) Your company's plan, to have plant and equipment in place, for placement of beach fill material beginning on the authorized dates referenced in Specification Section 02325, Paragraph 3.3, entitled Environmental Windows. The plan shall at a minimum include your company's proposed plant and equipment that shall be used to complete all work from stations 46+00 through 110+00 including beach fill, beach tilling, removal of all equipment, temporary grade stakes and beach fill pipeline, not later than 20 January 2005 and to complete all remaining work not later than 31 March 2005.

(2) A current Financial Statement.

(3) A Small Business Subcontracting Plan (Large Business Only)

Failure to provide these required documents at time and date stated for opening shall result in your company being determined Non-responsive.

NOTE 1:

The Government anticipates issuing the Notice to Proceed on or before 13 October 2004.

SECTION 00800 - SPECIAL CONTRACT REQUIREMENTS

The following have been modified:

52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (a) commence work under this contract within **TEN (10) calendar days** after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the work according to the following requirements:

(1) completion of all work between stations 46+00 and 110+00, including beach fill, beach tilling, and removal of all equipment, temporary grade stakes and beach fill pipeline, not later than **20 January 2005** and

(2) completion of all remaining work not later than **30 April 2005.** See Section 02325: DREDGING AND BEACH-FILL WORK, paragraph, ENVIRONMENTAL WINDOWS. The time stated for completion shall include final cleanup of the premises.

(3) The Government anticipates issuing the Notice to Proceed on or before **13 October 2004**.

(End of clause)

SECTION 01100:

(1) Delete existing Page 4 and Page 5 in their entirety and replace with revised liked-numbered Pages.

(2) Delete existing Attachment 1 - Index of Drawings and replace with revised Index.

SECTION 01355A: Delete existing Page 19 in its entirety and replace with revised liked-numbered Page.

SECTION 02325:

(1) Delete existing Page 4 through Page 19 in their entirety and replace with revised liked-numbered Pages.

(2) Delete existing Attachment 1 - Table 1 in its entirety and replace with revised Table 1.

(3) Delete existing Attachment 3 - Table in its entirety and replace with revised Table.

NOTE:
Text that is added or revised by this amendment is replaced in its entirety and underlined and/or printed in bold and/or stamped appropriately.

The text changes may have necessitated reformatting of subsequent text or pages. If this is the case, those pages have also been issued as amended pages but are not underlined with bold text.

DRAWINGS:

(1) Delete existing Plate Nos. P-1, P-4, P-9 and P-14 in their entirety and replace with revised Plates.

(2) Add Reference Drawings R-10 through R-17.

(End of Summary of Changes)

Encls
As stated

Job Hazard Analysis; FIO

Progress Chart; G

Quality Control Plan; G

Within 24 hours of conclusion of physical tests, 5 copies of test results including calibration curves and results of calibration tests.

SD-07 Certificates

Certificate of Insurance; FIO

Completion of Corps CQC Course; FIO

Letter Appointing Superintendent; FIO

Qualifications of the commercial testing laboratory or Contractor's testing facilities; GA.

1.3 **1.1 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER**

(a) This provision specifies the procedure for determination of time extensions for unusually severe weather in accordance with the contract clause entitled "DEFAULT (Fixed Price Construction)". In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

(1) The weather experienced at the project site during the contact period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

(2) The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.

(b) The following schedule of monthly anticipated adverse weather and/or sea conditions delays is based on wave hindcast information over a 20 year period (1980-1999). Offshore wave conditions from wave hindcast station data located approximately 10 miles from the project area were transformed to the local project area. Analysis of the wave conditions in the vicinity of the channel were performed to estimate the expected hours per month in which dredging operations may be impacted due to sea conditions. A wave height greater than 4 feet will constitute the base line for monthly weather time evaluations. The Contractor's progress schedule must reflect these anticipated adverse weather and/or sea conditions delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER AND/OR SEA CONDITIONS DELAYS (HOURS)

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
147	135	172	122	52	45	40	35	41	43	91	108

(c) Upon acknowledgement of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor will record on the daily

CQC report, the hours of adverse weather and/or sea conditions and resultant impact to normally scheduled work. Actual adverse weather and/or sea conditions delay hours must prevent work on critical activities for 50 percent or more of the Contractor's scheduled work hours.

(d) The number of actual adverse weather and/or sea condition delay hours shall include hours impacted by actual adverse weather and/or sea conditions (even if adverse weather and/or sea conditions occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded in full hours. If the number of actual adverse weather and/or sea conditions delay hours exceeds the number of hours anticipated in paragraph b, above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair work days, and issue a modification in accordance with the contract clause entitled "DEFAULT (Fixed Price Construction)."

1.4 U.S. COAST GUARD REQUIREMENTS - DREDGING OPERATIONS

(a) The Contractor shall provide lights and dayshapes on all vessels, plant, and pipeline dredges in accordance with 33 CFR 88.13, 88.15. The following specific maritime regulations shall be adhered to during the execution of this contract:

(1) Lights on dredge pipelines (33 CFR 88.15)

(2) Lights on barges at a bank or dock (33 CFR 88.13)

(3) Shapes and Lights (33 CFR 84.11 & 13)

(4) Mooring Buoys (33 CFR 62.35)

(5) Special Marks (33 CFR 62.31)

(6) Uninspected Towing Vessel's (UTV) Licensing Requirements (46 CFR 15.910 and 15.815)

(7) UTV Drug Testing Requirement (46 CFR 4.06 and 4.03.02)

(8) UTV Drug Marine Radar Requirement (33 CFR 164.01 (b) and 164.72)

(9) UTV Certificate of Documentation (33 CFR 173.21)

(10) UTV Marine Casualty Reporting Criteria (46 CFR 4.05-1)

(11) Dredge or UTV Advance Notice of Transfers (33 CFR 156.118)

(b) All boat operations shall follow the latest edition of the USCG Navigation Rules, International - Inland.

(End of Clause)

1.5 PERFORMANCE AND PAYMENT BONDS

Each bidder shall include his premiums for performance and payment bonds under item, "Performance and Payment Bonds" of the Bidding Schedule. Payment to the Contractor therefore, shall not exceed the bid price and shall be made in accordance with the Contract Clause entitled "PAYMENTS

		WILMINGTON HARBOR MAINTENANCE DREDGING, LOWER SWASH CHANNEL THRU BALDHEAD SHOAL CHANNEL	
Plate No.	**Sheet No.**	**Title**	**File**
P-1	1	INDEX OF DRAWINGS	clswpindx2.dgn
P-2	2	LOCATION MAP	clswploc2.dgn
P-3	3	BALDHEAD - CASWELL CHANNEL	bcaschncs2.dgn
P-4	4	SMITH ISLAND CHANNEL	smhichncs2.dgn
P-5	5	BALDHEAD SHOAL CHANNEL STA 0+00 TO 88+42.13	nbhschncs2.dgn
P-6	6	BALDHEAD - CASWELL CHANNEL BORING LOCATIONS	bcastorcs2.dgn
P-7	7	SMITH ISLAND CHANNEL BORING LOCATIONS	smhitorcs2.dgn
P-8	8	BALDHEAD SHOAL CHANNEL BORING LOCATIONS STA 0+00 TO 88+42.13	nbhstorcs2.dgn
P-9	9	BEACH FILL AREA BALD HEAD ISLAND SOUTH STA 46+00 TO 76+00	baldheadcs2.dgn
P-10	10	BEACH FILL AREA BALD HEAD ISLAND SOUTH STA 76+00 TO 100+00	baldheadcs2.dgn
P-11	11	BEACH FILL AREA BALD HEAD ISLAND SOUTH STA 100+00 TO 125+00	baldheadcs2.dgn
P-12	12	BEACH FILL AREA BALD HEAD ISLAND SOUTH STA 125+00 TO 151+00	baldheadcs2.dgn
P-13	13	BEACH FILL AREA BALD HEAD ISLAND SOUTH STA 151+00 TO 165+00	baldheadcs2.dgn
P-14	14	BEACH FILL AREA CROSS SECTIONS STA 46+00 TO 100+00	xsect.dgn
P-15	15	BEACH FILL AREA CROSS SECTIONS STA 104+00 TO 165+00	xsect.dgn
		Reference Drawings	
R-1		BALDHEAD - CASWELL CHANNEL	cas0226.dgn
R-2		SMITH ISLAND CHANNEL	sml0912.dgn
R-3		BALDHEAD SHOAL CHANNEL STA 0+00 - 85+00 REACH 1 AND 2	nbh0502.dgn
R-4		BALDHEAD SHOAL CHANNEL STA 0+00 - 85+00 REACH 1 AND 2	nbhs0620.dgn
R-5		BALDHEAD SHOAL CHANNEL STA 0+00 - 85+00 REACH 1 AND 2	nbs0730.dgn
R-6		BALDHEAD SHOAL CHANNEL STA 0+00 - 85+00 REACH 1 AND 2	nbhs0813.dgn
R-7		BALDHEAD SHOAL CHANNEL STA 30+00 - 60+00 REACHES 1 AND 2	nbhs0911.dgn
R-8		BALDHEAD SHOAL CHANNEL STA 30+00 - 60+00 REACHES 1 AND 2	nbhs290.dgn
R-9		BALDHEAD SHOAL CHANNEL STA 30+00 - 60+00 REACH 1	bhs1029.dgn
R-10		BALDHEAD SHOAL CHANNEL STA 0+00 - 85+00 REACHES 1 AND 2	bh10207.dgn
R-11		BALDHEAD SHOAL CHANNEL STA 0+00 - 85+00 REACHES 1 AND 2	nbhs0701.dgn
R-12		BALDHEAD SHOAL CHANNEL STA 0+00 - 85+00 REACH 1 AND 2	bh20922.dgn
R-13		BALDHEAD SHOAL CHANNEL STA 0+00 - 85+00 REACH 1	nbh11216.dgn
R-14		BALDHEAD SHOAL CHANNEL STA 0+00 - 65+00 REACHES 1 AND 2	bh1ad365.dgn
R-15		BALDHEAD SHOAL CHANNEL STA 0+00 - 65+00 REACHES 1 AND 2	bh1ad08.dgn
R-16		AS-BUILT CABLE ROUTE INDEX, NOTES & LEGEND	c-1.dwg
R-17		AS-BUILT CABLE LOCATION STA 57+00 TO STA 85+58	c-4.dwg

(Revised by Amendment No. 0002)

these animals. If any are observed, collisions shall be avoided either through reduced vessel speed, course alteration, or both. During the evening hours, when there is limited visibility due to fog, or when there are sea states of greater than Beaufort 3, the dredge must slow down to 5 knots or less when transiting between areas if whales have been spotted within 15 nautical miles of the vessel's path within the previous 24 hours.

i. Reporting. Daily observer reports shall be submitted with the "Daily Report of Operations for Hopper Dredges." Reports of take of any listed species shall be furnished to the Contracting Officer as soon as possible. All sea turtle sightings and locations (name of channel reach) shall be noted on the daily reports.

3.9.1.3 Pipeline Dredges

Special precautions to protect listed species are not required for pipeline dredges except as noted in subparagraph Avoidance of Marine Animals, below.

3.9.1.4 Mechanical Dredges

Special precautions to protect listed species are not required for mechanical dredges except as noted in subparagraph Avoidance of Marine Animals, below.

3.9.1.5 Beach Tilling

The Contractor shall be required to till the beach fill areas located between the mean high water line (+2.7' NGVD) and the landward tie-in of the berm. The areas shall be tilled with equipment operated so as to penetrate and loosen beach sand. Beach Tilling shall be accomplished in two phases. Phase 1 of beach tilling between **station 46+00 and 110+00 shall be accomplished immediately following completion of beach fill between station 46+00** and 110+00 and within the time frame stated in Section 02325: DREDGING AND BEACH-FILL WORK, paragraph ORDER OF WORK. Phase 2 of beach tilling shall be accomplished between station 110+00 and the east end of the beach fill limits. All beach construction activities including tilling operations are prohibited after April 30, 2005. Beach tilling shall be accomplished as follows:

a. Vertically to a depth of 36 inches.

b. Horizontally without leaving unloosened compact sand between the adjacent paths of tilling equipment.

c. Leveling. To remove furrows, the contractor shall level any materials which are tilled by dragging the areas during the tilling with fencing material, shoreline pipe etc., or approved methods.

d. Beach tilling shall not commence until directed by Contracting Officer.

3.9.1.6 Measurement and Payment for Beach Tilling

The unit measurement for beach tilling will be the acre. The quantities to be paid for shall comprise the actual areas acceptably

1.3.2 Beach Fill

The Village of Bald Head Island intends to issue a contract to install geotube groins between approximately baseline station 47+00 and 105+00 before 30 April 2005. The order of work for beach fill is intended to facilitate the installation of these geotube groins by the Village and to minimize sand sloughing off of the beach fill and depositing into Reach 1 of Baldhead Shoal Channel. The first order of work is for placement of beach fill between baseline **station 46+00** and station 110+00. Placement of fill shall begin at station 110+00 and continue uninterrupted to the west end of the beach fill limits at **station 46+00**. The Contractor shall complete all work including beach fill, beach tilling, and removal of all equipment, temporary grade stakes and beach fill pipeline between station **46+00** and 110+00 no later than 20 January 2005. Upon satisfactory completion of all work between stations **46+00** and 110+00, this area will no longer be available to the Contractor, but instead will be available exclusively to the Village of Bald Head Island to allow its installation of geotube groins before the 30 April 2005 deadline for completion of all work on the beach. The second order of work is for placement of beach fill between station 110+00 and approximately 165+00. For this reach, the Contractor shall begin at station 110+00 and continue uninterrupted to the east end of the beach fill limits. The east end of the beach fill limits shall be field adjusted to fit the quantity of dredged material placed on the beach. The Contractor shall develop and submit a beach fill operations plan for the Contracting Officer's Approval. See Section 01100: SUPPLEMENTARY SPECIAL CONTRACT REQUIREMENTS, paragraph, FINAL EXAMINATION AND ACCEPTANCE OF BEACH FILL for beach fill acceptance requirements.

1.4 CHARACTER OF MATERIALS

The material to be removed is predominantly composed of shoaled material which has occurred since the various areas were last dredged. The shoaled materials are believed to consist primarily of sand and dense sand, but may also include silt and clay, wood, metal, and other sunken debris that may have become lodged in the channel. Insitu material may be encountered within the allowable overdepth. If insitu material is encountered, it may consist of sand, dense sand, silt, clay, wood, cemented sand, silt and clay, and rock with high compressive strength. For definitions of materials, see Geotechnical Manual, DM 1110-1-1, latest edition. See attached drilling logs and laboratory data provided in Appendices A, B, C, and D. Reference drawings are also provided, which show during dredging andafter dredging survey soundings representing channel conditions during and after deepening in 2002, **2003 condition surveys and before and after dredging survey soundings representing channel conditions before and after maintenance dredging in 2003.**

1.5 NOTICES

(a) The Contractor shall give the Contracting Officer five (5)days advance written notice before commencing work.

(b) The Contractor shall be responsible for requesting Government before-dredging surveys, in writing five (5) days prior to beginning work in an acceptance section.

(c) The Contractor shall also be responsible for requesting Government after-dredging surveys. The Government will conduct after-dredging surveys, within three (3) working days of a written request from the Contractor.

1.6 NAVIGATION AIDS

There may be aids to navigation within the project boundaries. Some, or all, of such aids to navigation may need to be removed for the accomplishment of the contract work. It is the responsibility of the Contractor to timely determine any need for moving of aids to navigation and to coordinate with the U.S. Coast Guard (USCG) and any other responsible parties to accomplish any needed movement. Any impacts to the work due to the inability of the Contractor to accomplish any needed movement of aids to navigation will not be the responsibility of the United States Government or of the Contracting Officer.

1.7 MISPLACED MATERIAL

Any material, including material lost through leaks in the pipelines, that is deposited or allowed to flow elsewhere than in places designated or approved by the Contracting Officer will be considered as misplaced material. If, in the opinion of the Contracting Officer, this misplaced material will in any way be a hazard to navigation, to normal activities of the public, or to the environment, the Contractor shall remove such misplaced material and deposit it where directed at the Contractor's expense. Misplaced material includes any dredged material placed outside the tolerances as specified for the beach fill sections.

1.8 SUBMITTALS

The following shall be submitted to the Contracting officer in accordance with Section 01330 SUBMITTAL PROCEDURES:

a. Dredging Plan

b. Dredge material disposal plan

c. Turtle deflector device design (required if hopper dredge is to be used to accomplish the work); G

d. Inflow basket or screen design (required if hopper dredge is to be used to accomplish the work); G

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 DREDGE POSITIONING SYSTEM

Each dredge shall be equipped with an electronic positioning system, capable of positioning the dredge in the channel with accuracies as shown in Table 3.1 Minimum Performance Standards for Corps of Engineers Hydrographic Surveys (Mandatory) in the U. S. Army Corps of Engineers Engineer Manual, EM 1110-2-1003 (Hydrographic Surveying), 1 January 2002 edition. This positioning system shall be established, operated, and maintained by the Contractor during the entire period of the contract. The positioning system shall be used to precisely locate the dredge and shall be capable of displaying and recording the dredge's location in an acceptable coordinate system which can be related to, or is directly based on, the North Carolina Lambert State Plane Coordinate System. Navigation channel control, and shore station control, if required, will be provided

to the Contractor in the same North Carolina Coordinate System prior to the commencement of work. It shall be the responsibility of the Contractor to have the positioning/navigation system reviewed and inspected by the Contacting Officer's Representative prior to the commencement of work.

3.2 QUANTITIES SUMMARY

The quantities listed in the table below include the volumes present at the time of the surveys indicated in the contract drawings, plus anticipated shoaling before dredging begins.

The soundings depicted on the drawings represent the result of surveys made on the date indicated and can only be considered as indicating the general conditions existing at that time. The conditions are subject to rapid change due to shoaling. Shoaling rates within the project limits, particularly in Reach 1 of Baldhead Shoal Channel, vary greatly due to wind and wave conditions.

Should the total quantity of material to be paid for under the contract exceed the limit established in the clause entitled "Variations In Estimated Quantities" additional time will be allowed at the rate of one (1) calendar day for the average daily production rate achieved by the equipment used on the project for excavation in excess of the established limit.

Acceptance Sections (Channel Reach)	Total Cubic Yards to Required Depth	Total Including Allowable Overdepth (CY)
Baldhead-Caswell	10,000(44')	15,000(46')
Smith Island	400,000(44')	550,000(46')
Baldhead Shoal Sta. 0+00 to 15+00	5,000(44')	15,000(46')
Baldhead Shoal Sta. 15+00 to 40+00	290,000(44')	415,000(46')
Baldhead Shoal Sta. 40+00 to 88+42.13	305,000(44')	620,000(46')
TOTAL	1,010,000	1,615,000

3.3 ENVIRONMENTAL WINDOWS

The following is for information purposes only and is not intended to imply a contract performance period.

a. Beach disposal activities will be limited to the period of 16 November through 30 April.

b. Dredging with pipeline dredges is allowed throughout the year in the project area. However, for this contract, dredging with pipeline dredges will be limited to the period of 16 November through 30 April to comply with the beach disposal window.

c. The dredging window for hopper dredges is 1 December through 31 March, inclusive.

3.4 LOCAL OFFICE

The Contractor shall maintain a land based office in the immediate vicinity of the project. This office shall be equipped with at least one operable telephone and fax machine, which provides both local and long distance service. The number for this equipment shall be provided to the Contracting Officer's Representative during the preconstruction conference, and the telephone shall be monitored and answered by contractor personnel during working hours.

3.5 OVERDEPTH AND SIDE-SLOPES

3.5.1 Overdepth

This contract allows overdepth dredging. No payment will be made for any material that is removed from below the allowable overdepth or outside of the indicated side-slopes.

3.5.2 Side-Slopes

Material actually removed within limits approved by the Contracting Officer, leaving final side-slopes no flatter than the side-slopes indicated by the typical dredging sections shown on the drawings will be paid for, whether accomplished by dredging the original position or the space below the pay slope plane and allowing up slope materials to fall into the cut.

3.5.3 Excessive Dredging

Material taken from beyond the limits as extended in provision, side-slopes above, will be deducted from the total amount dredged as excessive dredging and will not be credited.

3.6 PLACEMENT OF MATERIALS FOR BEACH FILL

3.6.1 General

3.6.1.1 Placement

Placement of beach fill material shall be within the limits shown on the drawings. The beach fill shall be constructed to provide a berm with a top elevation at 8 feet NGVD 29. The seaward edge of the construction berm is defined by offset distances from the Corps of Engineers baseline. Baseline stations with construction berm offset distances are provided in Attachment 3. The beach fill material shall be placed by discharging the material directly into the fill section from the dredge discharge pipe or by stockpiling the dredged material on the beach, in an area approved by the Contracting Officer, and hauling the material by wheeled or tracked earth moving equipment into the fill section. A combination of the above two methods may also be used. Except as provided for below, the dredged material shall be placed at the location and within the prescribed tolerances of the design sections as shown on the plans and in accordance with subparagraph, Tolerances, unless otherwise approved by the Contracting Officer. No material shall be placed unless an inspector appointed by the Contracting officer is present at the time, or has given his permission for

the Contractor to proceed. The Contractor shall be required to re-distribute any material that is deposited in places not designated or approved by the Contracting Officer. The Contractor shall be required to remove such misplaced material and deposit it where directed at his own expense. The Contractor shall avoid using wheeled or tracked earth moving equipment to distribute fill material in close vicinity of dune crossovers. Hand tools shall be used to place fill material around the crossovers.

3.6.1.2 Materials

The dredging shall be accomplished so that the most suitable material available for beach fill is placed within the prescribed section. This material should be predominantly of sand (SP, SP-SM, SM) grain size with no more than 10% (by weight) silt and clay (MH, ML, CH, OH, OL) material present. Material with more than 10% (by weight) silt and clay and organic materials and gravel, cobbles, and boulders are unsuitable for beach placement.

3.6.1.3 Objectional Matter

Objectionable matter such as stumps, roots, logs, or other organic or inorganic debris having a diameter of 2 inches or more and/or a length of 1 foot or more, or accumulations of small vegetative growth or debris shall be collected and placed in a disposal area furnished by the Contractor and approved by the Contracting Officer as the work progresses. Objectionable matter such as large clay balls shall be broken up and dispersed and/or mixed in with the beach fill section by scarifying or other appropriate method approved by the Contracting Officer.

3.6.2 Beach Fill

3.6.2.1 Discharge Points

When the fill material is placed by discharging the material in a controlled manner directly into the fill section, the dredge discharge points shall be manipulated and controlled by the Contractor in such a manner to minimize the loss of material into the surf zone.

3.6.2.2 Longitudinal Dikes

For beach fill material placed by discharging the material directly into the fill section, the Contractor shall provide temporary longitudinal dikes and spreader and pocket pipe as necessary to prevent gullying and erosion of the beach and fill and to retain the fill on the beach and within the limits of the fill cross section. Longitudinal dikes shall initially be 300 feet long in advance of filling operations. Shorter lengths may be subsequently used if approved by the Contracting Officer. Groins, bulkheads, revetments, storm drain outfall pipes, walkover structures, tube groins, and other structures within the fill section shall be protected by the Contractor to prevent damage thereof by the Contractor's operations. Any damages to any of the above items resulting from the Contractor's activities shall be at the Contractor's expense. If dredged material is to be stockpiled on the beach for hauling with wheeled or tracked equipment, the Contractor shall provide dikes, embankments, temporary bulkheading and spillways to confine the material within the approved stockpile areas. For stockpile areas, the material shall be confined shoreward of the seaward crest of the new top of berm elevation contour as indicated on the drawings.

3.6.2.3 Fill Adjustments

It is the intent of the Contracting Officer to control the yardage of the fill material along the beach to that which is needed to construct the fill section for the entire length of the beach as shown on the drawings by varying the width of the top of the berm. The distribution of the yardage along the beach, which is based on the design cross sections, the latest survey as of the date of these specifications, and the amount of material removed from the channel is tabulated on Table 1 which is provided as Attachment 1. Note that the amount of material retained on the beach is assumed to be 15% less than the volume of material removed from the channel. Periodic checks of the difference between the volume of material removed from the channel prisms and the amount of material retained on the beach will be made during the prosecution of the work. If the difference is found to be different from the assumed 15%, appropriate adjustments will be made in the retention volumes given in Table 1. The width of the top of the berm is shown on the drawings and is based on the quantity of material to be placed and an assumed slope of the placed material of 20H:1V seaward of the crest of the berm to the point of intersection with the existing bottom. The actual width of the berm needed to achieve the volumetric distribution given in Table 1 will be based on Government interpretation of the channel and beach profile surveys and the actual slope that the material assumes during placement. The Contractor shall maintain the fill section in a satisfactory condition at all times until final completion and acceptance of the work as specified in Section 01100: SUPPLEMENTARY SPECIAL CONTRACT REQUIREMENTS, paragraph, FINAL EXAMINATION AND ACCEPTANCE OF BEACH FILL.

3.6.2.4 Temporary Safety Fencing

Before any pumping or discharging of dredged material on the beach can occur, the Contractor shall furnish and erect temporary safety fencing at a distance of 500 feet on either side of the discharge point for the beach fill placement. The temporary safety fencing shall totally encompass the general area around the discharge point for beach fill and shall be moved along the beach in conjunction with the location of the discharge point. The Contractor shall provide a 6-foot wide travel way between the dunes and the fence to allow beachgoers to safely walk around the work area. The intent of the safety fencing is to restrict and limit the public access to and around the general area of the discharge point. The temporary safety fencing shall be a high visibility orange colored, high density polyethylene grid or approved equal, a minimum of 42 inches high, supported and tightly secured to steel posts located on maximum 10 foot centers. The Contractor shall assign a person to monitor and patrol the temporary safety fence during pumping operations to insure that the public is kept out of and away from the area where the pumping operations is occurring. The safety fencing shall be maintained by the Contractor during the life of the contract and, upon completion of the beach disposal work, shall become the property of the Contractor and shall be removed from the work site. No direct payment will be made for the temporary safety fencing.

3.6.2.5 Temporary Warning Signs

Before any pumping or discharging of beach fill material can occur, the Contractor shall furnish and erect temporary warning signs along and around the outside perimeter of the temporary safety fencing. One temporary warning sign shall be placed along each side of the temporary safety fencing and for each direction accessible to the public. The temporary warning sign shall be moved along the beach in conjunction with the

location of the discharge point and the temporary safety fencing. The intent of the warning signs is to warn the public of the hazards and danger of the beach filling operations, construction equipment, and the discharge point. The signs shall be fabricated using 3/4", Douglas Fir, Exterior Marine-Grade, HDO plywood with 4"x4"x12' treated, No. 2 Southern Pine posts installed in 3 feet deep by 12-inch diameter holes backfilled with compacted soil. Sign faces shall be non-reflective vinyl. All letters and logos shall be die-cut or computer-cut. Letter and logo sizes and application to the plywood panel shall conform to the graphic format shown in the U.S. Army Corps of Engineers Signs Standard Manual. The Communications Red panel on the left side of the construction project sign, with Corps logo (reverse version), shall be screen printed onto the white background. Copies of the sign standards manual can be obtained from the Contracting Officer for specific fabrication and installation requirements.

Legends and logos for the temporary warning signs shall be as shown on Attachment 2. No direct payment will be made for the warning signs. The warning signs shall be maintained by the Contractor during the life of the contract and, upon completion and acceptance of the beach fill work, shall become the property of the Contractor and shall be removed from the work site.

3.6.2.6 Construction and Grade Stake Recovery Plan

(a) It is the intent of the Government that the welfare of the public be protected during dredging and beach construction activities. It is also the Government's intent to protect the welfare of the public after beach construction activity is completed. Beach grade stakes left in place, either by being broken off at or below grade, bulldozed over, or left in the surf creates a long term public hazard to beach goers and swimmers. Therefore, the Contractor shall prepare and submit for the Contracting Officer's approval a "Construction and Grade Stake Recovery Plan". The "Construction and Grade Stake Recovery Plan" shall outline steps necessary to recover all grade stakes installed for purposes of constructing beach disposal sections. The Recovery Plan shall maintain a log or map to inventory all the stakes used in the beach disposal construction. The log/map shall include information concerning the location, installation, and recovery of all stakes. The Contractor shall make this log/map available for review by the Contracting Officer upon request. Upon completion of the beach disposal, the Contractor shall furnish the log/map to the Contracting Officer.

(b) Grade stakes and any other stakes for any purpose shall be made of such material that can and shall be removed intact after filling to cross sections accepted by or as directed by the Contracting Officer. All stakes shall have sufficient length above grade so they may not be accidentally covered by fill. The Contractor shall consecutively number each grade stake, shall clearly mark that number upon the stake, and shall record the location of each numbered stake in a grade stake log/map. The removal of each numbered stake shall be recorded in the grade stake log at the time of the stake removal. At the request of the Contracting Officer, all of the grade stakes shall be displayed after their removal to demonstrate those stakes that have been removed. All grade stakes placed within the limits of the beach fill work shall be numbered and shall be recorded in the log/map. It is the Contractor's responsibility to track, locate, and completely remove all grade stakes in their entirety to the satisfaction of the Contracting Officer.

3.6.3 Pipeline Route

3.6.3.1 General

The dredged material to be placed on the beaches must be transported over routes that may include public property and navigable and unnavigable water. Local authorities will acquire and furnish all permits, rights-of-way or easements required for the areas shown or specified in which the beach fill is to be placed. Prior to installing the pipeline, the Contractor shall devise a specific pipeline route that will be used and obtain the written approval for the specific pipeline route from the Contracting Officer. The pipeline route shall be devised so as to minimize adverse impacts on vegetation, wildlife, dunes and beach traffic. No road crossings are anticipated for this contract. No pipeline will be placed or stored on the beach seaward of the dune prior to November 16, 2004; except, a submerged pipeline may be landed perpendicular to the beach prior to that date. Construction activities on the beach are prohibited after April 30, 2005 (see paragraph ENVIRONMENTAL WINDOWS). This includes disposal, grading, tilling and pipe removal. No work or equipment will be allowed on the beach at any time within 50 feet of a sea turtle nest that has not hatched. Piping may be stored landward of the dunes with approval of Village of Bald Head Island officials.

3.6.3.2 Dune Crossings

It is the intent of these specifications to minimize the damage to the dunes and vegetation thereon. The Contractor shall exercise extreme care in placing the pipeline across the dunes to the beach, should it become necessary for the pipeline to cross existing dunes. The designated routes shall be followed to the extent practicable and in no case will deviations be made without the written approval of the Contracting Officer. The Contractor will not be allowed to grade, or otherwise disturb the natural dunes. Equipment used in placing and removal of the pipeline shall meet the approval of the Contracting Officer.

Any degradation of the dune area caused by the Contractor's operation shall be restored as near as practicable to the natural condition. This restoration may include sprigging the area with American Beachgrass *(Ammophila breviligulata)*, as directed by the Contracting Officer. Areas planted with American Beachgrass shall be fertilized with 30-10-0 analysis at the rate of 300 pounds per acre.

3.6.3.3 Pedestrian Access

The pipeline shall be covered with sand at the Public Beach Access points in each of the completed sections in such a manner so as to allow beach users unobstructed access to the completed beach fill section. The pedestrian access points shall be removed and graded to the final cross section upon the completion of the beach fill.

3.6.3.4 Pipeline Leakage

A tight dredge discharge pipeline shall be maintained along all sections of the pipeline to prevent spilling of dredged effluent outside of the beach fill section or stockpiling area. To minimize damage caused by leaks in the pipeline on the land section of the line, the Contractor shall provide a periodic patrol of the pipeline. A minimum of 12 daily inspections shall be made by the Contractor during disposal operations (four (4) inspections each 8-hour shift). The Contractor shall burlap and strap weld all joints

of shore sections of pipeline. When significant leaks occur in the pipe line which can cause erosion of the existing beach or a completed beach fill section and/or appears to be a safety hazard to the public, the Contractor shall immediately cease pumping operations until the pipeline is repaired.

3.6.3.5 Booster Pumps

In the event booster pumps are required along the dredge pipeline, they shall be located so as to minimize the disturbance of residents. The location of all booster pumps shall be approved in advance by the Contracting Officer. All booster pumps shall be fitted with appropriate noise control devices as designed by the manufacturer. The noise control devices shall be maintained in proper condition throughout the life of the contract.

3.6.4 Tolerances

A vertical tolerance of five-tenths (0.5) of one foot above and five-tenths (0.5) of one foot below the prescribed berm grade and slopes, at and above the top of berm elevation line as shown on the drawings, will be permitted in the finished surface. Below the top of berm elevation line, the fill material will be allowed to assume its natural slope as directed by wave and water level conditions. Any material placed outside the prescribed tolerances may be left in place at the discretion of the Contracting Officer; however, the Contractor will not be paid for the material placed outside the prescribed tolerances. The Contractor shall be required to redistribute and/or reshape any material placed outside the prescribed tolerances to conform to the requirements of the contract.

3.7 SUBMERGED PIPELINE

(a) In the event the Contractor elects to submerge his/her pipeline, the location of the submerged pipeline shall be marked with signs, buoys, flags, and lights conforming to U.S. Coast Guard regulations and to the complete satisfaction of the Contracting Officer. Any offshore submerged dredging pipeline shall not be placed within 500 feet of the landward tie-in of the beach fill to avoid interference with the geotube groin installation by the Village of Bald Head Island.

(b) At locations where submerged pipeline crosses a navigation channel, the Contractor shall place the pipeline at such a depth that the top of the pipe is below the authorized depth of the channel. The Contractor shall install and maintain red over red lights on both sides of the navigation channel marking the location of the submerged pipeline. At locations supported by trestle, the Contractor shall also install and maintain flashing yellow lights at 10 meter intervals from the red light marking the location of the pipeline to the shoreline. The Contractor shall erect and maintain a warning sigh at locations where submerged pipeline crosses a recognized navigation channel. The signs shall be 4' by 8' in size and read:

"CAUTION: SUBMERGED PIPELINE CROSSING."

(1) Red over red lights shall be visible all around the horizon, visible for at least 2 miles on a clear dark night and one meter apart in a vertical line with the lower light at the same height, not less than 1 and not more than 3.5 meters, above the water at the yellow lights.

(2) Flashing yellow lights shall flash at a rate of 50 to 70 times per minute, shall be visible all around the horizon, shall be visible for at least 2 miles on a clear dark night, shall be not less than 1 and not more than 3.5 meters above the water, shall be equally spaced.

(c) When the submerged pipeline runs outside the navigation channel, the Contractor shall mark the pipeline route with buoys with yellow lights at intervals not to exceed 50 meters unless otherwise approved by the Contracting Officer and at abrupt changes in direction. The Contractor shall also erect signs at one (1) mile intervals along routes of submerged pipelines. The signs shall be 4' by 8' and read:

"CAUTION: SUBMERGED PIPELINE"

(d) All lights shall be visible for at least 2 miles on a clear dark night, visible all around the horizon, not less than one (1) and not more than 3.5 meters above the water and equally spaced.

3.8 DREDGING LIMITS

All dredging shall be confined to within the area and depth limits shown. Dredging shall be regulated and controlled so that bank sloughing does not occur beyond the limiting lines indicated by the typical dredging sections shown on the drawings. Materials taken from beyond these limits will be deducted from the total amount.

3.9 COMMUNICATIONS

The Contractor shall furnish and maintain a radiotelephone and a cellular phone on the dredge(s) throughout the period of the contract. The plant will not be allowed to begin work until the VHF marine band radio is installed and in good working order and a properly operating cellular phone is on board. The radiotelephone shall be capable of operation from the dredge's main control station and capable of transmitting and receiving on a frequency or frequencies within the 156-162 megahertz band using the classes of emissions designated by the Federal Communications Commission. Continuous radio contact shall be maintained between the dredge control room and the inspectors of the beach fill areas as well as the personnel patrolling the pipeline.

3.10 MEASUREMENT AND PAYMENT

3.10.1 General

The total volume of all material removed and to be paid for under this contract will be measured by the cubic yards in place, by computing the difference in volume between the bottom surface shown by soundings of a survey before dredging each acceptance section and the bottom surface shown by the soundings of a survey made as soon as practicable after completion of each acceptance section. The calculations will exclude any volume of material removed from beyond the limits of the side-slopes and/or below the allowable overdepth and will be further reduced by the volume of any misplaced material. All final pay quantities shall be determined from before and after dredging surveys conducted by the Government. All work connected with excavation, transportation, placing, and shaping of the beach fill, controlling and confining the dredge effluent, surveys for layout and control of the dredging work surveys described in SECTION 01100: SUPPLEMENTARY SPECIAL CONTRACT REQUIREMENTS, paragraph, BEACH SURVEYS AND SURVEY PERSONNEL, and repairs and inspections shall be included in the

contract price for "Dredging with Beach Fill".

3.10.2 Contract Drawings

The drawings referred to in SECTION 01100, paragraph, CONTRACT DRAWINGS AND SPECIFICATIONS, are believed to represent the conditions existing on the dates of survey. The bottom conditions will be determined by before dredging surveys of each acceptance section prior to commencement of dredging and new maps representing the before dredging bottom conditions of the area to be dredged will be furnished to the Contractor. Determination of quantities removed and the deductions made therefrom to determine quantities by in-place measurement to be paid for in the areas specified, after having once been made, will not be reopened, except on evidence of collusion, fraud, or obvious error.

3.10.3 Payments

Payment for "Dredging with Beach Fill" shall be made upon acceptance of each channel dredging acceptance section to required template. See paragraph, QUANTITIES SUMMARY, describing dredging acceptance sections. In addition, no payment for "Dredging with Beach Fill" will be made until final acceptance of the associated beach fill acceptance section in accordance with the contract. See Section 01100, Final Examination and Acceptance of Beach Fill, for beach fill completion and final acceptance requirements.

3.10.4 Method of Survey

Class 1 Hydrographic surveys with associated tidal control, as specified in the U.S. Army Corps of Engineers, latest Publication Number (EM 1110-2-1003, Engineering and Design - Hydrographic Surveying), will be accomplished by the Government with the use an automated hydrographic surveying system installed aboard one of the Wilmington District's survey vessels. Horizontal location of survey lines and depth sounding points will be determined by the use of Real Time Kinematic (RTK) differentially corrected GPS (DGPS). Depth soundings will be taken using a 200/28 Khz depth sounder/digitizer system. Payment for material removed will be based on the 28 Khz depth soundings. The echo sounder system will be calibrated at the job site using the "bar check" method and verified for accuracy twice daily.

3.10.5 Survey Lines

Data will be secured by running survey lines parallel to the longitudinal axis of the channel. A sufficient number of lines will be run to assure good coverage of the bottom. A minimum of two (2) lines will be run within the grade slopes. The after dredging surveys will be performed in the same manner as the before dredging surveys. Weather permitting, before and after dredge surveys will be made during the same tidal stage.

3.10.6 Misplaced Material

No payment shall be made for any material placed outside of the tolerances of the typical beach section unless otherwise authorized. The Contractor shall be required to redistribute any misplaced material in the beach fill placement areas in order to conform with the typical beach section and tolerances given in the contract. This shall be accomplished at his own expense.

3.11 COMPLIANCE WITH APPLICABLE NAVIGATION RULES AND REGULATIONS, MARINE EQUIPMENT

The Contractor shall ascertain that all vessels used in performance of this contract are commanded, equipped, navigated and/or operated in strict compliance with the general regulations of the Department of the Army and the U.S. Coast Guard, including but not limited to applicable safety, environmental, and navigational rules and regulations in the Code of Federal Regulations.

Installation (i.e., pipeline, pipeline risers and/or booster stations) as may be placed by the Contractor on or over the seabed of the work area are obstructions or structures in accordance with Title 33 CFR SUBPART 67.01. Such installations or portions thereof, are subject to applicable regulations set forth in Title 33 CFR, parts 64, 66 and 67. The responsibility for notifying the Commander, Fifth Coast Guard District, per Title 33 CFR SUBPART 67.40 and the responsibility of securing necessary installation approvals therefrom, rests with the Contractor. The further responsibility for maintaining and operating his/her job site installation and vessels in accordance with applicable laws also rests with the Contractor.

3.12 FLOATING PLANT INSPECTION AND CERTIFICATION

Floating plant inspection and certification shall comply with paragraph 19.A.01 of EM 385-1-1.

If a hydraulic pipeline dredge is used to perform the work, it shall be ocean certified. The Contractor shall provide a tug at the work site for the duration of the contract capable of moving the hydraulic pipeline dredge to a safe area in the event of severe weather.

3.13 REPORTING REQUIREMENT

The Contractor will be required to prepare daily a "Report of Operations" (Attachment 4 and/or Attachment 5 of Section 01451) and furnish copies thereof to the Contracting Officer. The Contractor shall furnish daily a copy or copies of any Contractor forms or operational reports he routinely requires to be submitted by his field personnel.

Beach survey data, field notes and computations shall be furnished to the Contracting Officer in advance of placement of the beachfill so that control of the quantities and adjustment to the fill section may be made if necessary.

3.14 FENDER TIRES

All fender tires used on Contractor dredging equipment or vessels shall be permanently marked by the Contractor with the company name and equipment plant name. All fender tires shall be securely attached to prevent them from falling overboard. The Contractor shall be responsible for damages to fishing nets or other claims that are due to any loss of equipment such as fender tires, cables, anchors, pipe, etc.

3.15 HOPPER DREDGE EQUIPMENT

Hopper dredge drag heads shall be equipped with rigid sea turtle deflectors that are rigidly attached. No dredging shall be performed by a hopper dredge without a turtle deflector device that has been approved by the

Contracting Officer.

3.15.1 Deflector Design

The leading vee-shaped portion of the deflector shall have an included angle of less than 90 degrees. Internal reinforcement shall be installed in the deflector to prevent structural failure of the device. The leading edge of the deflector shall be designed to have at least a 6" depth plowing effect when the drag head is being operated. Appropriate instrumentation or indicator shall be used and kept in proper calibration to insure the critical "approach angle."

(Information Only Note: The design "approach angle" or the angle of lower drag head pipe relative to the average sediment plane is very important to the proper operation of a deflector. If the lower drag head pipe angle in actual dredging conditions varies tremendously from the design angle of approach used in the development of the deflector, the 6" plowing effect does not occur. Therefore, every effort should be made to insure this design "approach angle" is maintained with the lower drag pipe.)

If adjustable depth deflectors are installed, they shall be rigidly attached to the drag head using either a hinged aft attachment point or an aft trunnion attachment point in association with an adjustable pin front attachment point or cable front attachment point with a stop set to obtain the 6" plowing effect. This arrangement allows fine-tuning the plowing effect for varying depths. After the deflector is properly adjusted there shall be NO openings between the deflector and the drag head that are more than 4" by 4".

3.15.2 Inflow Basket Design

The Contractor shall install baskets or screening over the hopper inflow(s) with no greater than 4" x 4" openings. The method selected shall depend on the construction of the dredge used and shall be approved by the Contracting Officer's Representative prior to commencement of dredging. The screening shall provide 100% screening of the hopper inflow(s). The screens and/or baskets shall remain in place throughout the work.

The Contractor shall install and maintain floodlights suitable for illumination of the baskets or screening to allow the observer to safely monitor the hopper basket(s) during non-daylight hours or other periods of poor visibility. Safe access shall be provided to the inflow baskets or screens to allow the observer to inspect for turtles and sturgeons, or parts thereof, and clean the baskets or screens for the next loading cycle. The inflow screens shall be maintained in operational condition throughout the period of the work. Debris shall be cleaned from the baskets or screens and disposed of in a public or private upland disposal area. All costs associated with disposal of debris is the responsiblity of the Contractor and shall be included in the contract unit price for dredging.

3.15.3 Hopper Dredge Operation

The Contractor shall operate the hopper dredge to minimize the possibility of taking sea turtles.

When initiating dredging, suction through the dragheads shall be allowed just long enough to prime the pumps, then the dragheads must be placed firmly on the bottom. When lifting the dragheads from the bottom, suction through the dragheads shall be allowed just long enough to clear the lines,

and them must cease. Pumping water through the dragheads shall cease while maneuvering or during travel to/from the disposal area.

(Information Only Note: Optimal suction pipe densities and velocities occur when the deflector is operated properly. If the required dredging section includes compacted fine sands or stiff clays, a properly configured arrangement of teeth may enhance dredge efficiency which reduces total dredging hours and "turtle takes." The operation of a drag head with teeth must be monitored for each dredged section to insure that excessive material is not forced into the suction line. When excess high-density material enters the suction line, suction velocities drop to extremely low levels causing conditions for plugging of the suction pipe. Dredge operators should configure and operate their equipment to eliminate all low level suction velocities. Pipe plugging in the past was easily corrected when low suction velocities occurred by raising the drag head off the bottom until the suction velocities increased to an appropriate level. Arrangements of teeth and/or the reconfiguration of teeth should be made during the dredging process to optimize the suction velocities.)

Raising the drag head off the bottom to increase suction velocities is not acceptable. The primary adjustment for providing additional mixing water to the suction line should be through water ports. To insure that suction velocities do not drop below appropriate levels, the Contractor's personnel shall monitor production meters throughout the job and adjust primarily the number and opening sizes of water ports. Water port openings on top of the drag head or on raised stand pipes above the drag head shall be screened before they are utilized on the dredging project. If a dredge section includes sandy shoals on one end of a tract line and mud sediments on the other end of the tract line, the Contractor shall adjust the equipment to eliminate drag head pick-ups to clear the suction line.

Near the completion of each payment section, the Contractor shall perform sufficient surveys to accurately depict those portions of the acceptance section requiring cleanup. The Contractor shall keep the drag head buried a minimum of 6 inches in the sediment at all times. Although the over depth prism is not the required dredging prism, the Contractor shall achieve the required prism by removing the material from the allowable over depth prism.

During turning operations the pumps must either be shut off or reduced in speed to the point where no suction velocity or vacuum exists.

These operational procedures are intended to stress the importance of balancing the suction pipe densities and velocities in order to keep from taking sea turtles.

The Contractor must comply with all requirements of this specification and the Contractor's accepted Environmental Protection Plan. The contents of this specification and the Contractor's Environmental Protection Plan shall be shared with all applicable crew members of the hopper dredge.

3.16 WATER POLLUTION CONTROL

3.16.1 Contamination of Water

The Contractor shall not pollute the channels or beach fill area with paints, fuels, oil, bitumens, calcium chloride, insecticides, herbicides, or any other substance which may be considered harmful to fish, shellfish, or wildlife. It is the responsibility of the Contractor to investigate and

comply with all applicable Federal, State, County, and municipal laws concerning pollution of rivers and streams and health protection of shellfish, fish, and domestic animals.

3.16.2 Disposal of Materials

The methods and locations of disposal of materials, wastes, effluents, trash, garbage, oil, grease, chemicals, etc., shall be such that harmful agents will not enter the waterway, ocean, and sound by erosion and shall be subject to approval by the Contracting Officer.

3.17 EMERGENCY DUMPS

If a vessel experiences an emergency situation which causes a dumping of material outside of the designated disposal areas, the Contractor shall verbally notify the Contracting officer no later than the next work day. The Contractor must submit, in writing within two (2) days of the emergency dump, a statement detailing time of dump, location of dump, and reason dump occurred. Material that is misplaced due to an emergency dump situation is subject to removal by the Contractor at his own expense upon the request of the Contracting Officer.

3.18 TIDE DATA

3.18.1 Real Time Kinematic (RTK) GPS

Real Time Kinematic (RTK) GPS will be used by the Corps of Engineers to determine real time water levels (tide corrections) in the Wilmington Harbor Project area. If the Contractor desires to obtain these corrections, he shall be responsible for providing navigation equipment capable of utilizing the transmitted signals from the Corps-owned RTK GPS base stations. Radio frequencies and information on the Corps-owned equipment can be obtained from Mr. Marc Reavis at (910) 251-4489. Corps personnel will instruct the Contractor as to the proper use of this system.

3.18.2 Kinematic Tidal Datum

A file listing the separations between the Reference Ellipsoid and the Chart Datum (Mean Lower Low Water) will be provided to the Contractor for entry into the hydrographic survey software. A Tidal Datum Diagram showing the relationship between NAVD 88 and Mean Lower Low Water will be provided upon request.

3.18.3 Non-Operational Reference Station

In the event that the reference station becomes non-operational, the Contractor shall contact Mr. Marc Reavis at the telephone number shown above. The Government will take measures to ensure correction of any problems with the GPS equipment.

3.19 SURFACE TRANSPORT OF DREDGED MATERIAL

a. Transportation of dredged material by barges and scows to the beach disposal area will be allowed for this contract. All disposal vessels shall be equipped with draft and position measuring and recording devices. These instruments shall be kept in good working order.

b. All scows shall be kept in good condition and the coamings kept in good repair. All scows shall have their pockets provided with proper

doors or appliances to prevent leakage of material. Failure to repair leaks will result in suspension of dredging. If suspension occurs, dredging will not be allowed to resume until the Contractor has promptly repaired the scow to the satisfaction of the Contracting Officer. Overflow of scows to obtain an economic load will be allowed.

3.20 HAWSER LENGTH

The Contractor shall be required to document the length of cable or hawser released during the tow of each scow or barge to the disposal site. The distance between the scow and the towing vessel shall be noted for each disposal event and made a part of the daily report of operations. A digital compass shall be used to provide an azimuth to the scow.

3.21 QUALITY CONTROL

The Contractor shall establish and maintain quality control for the berm work and all other operations in connection therewith to assure compliance with contract requirements. The Contractor shall inspect for compliance with contract requirements and record the inspection of all operations including but not limited to the following:

The fill material is placed within the tolerances specified.

Dredging is confined within the limits of the designated channel.

The dredge effluent does not flow landward of the fill section or other limits established by the Contracting Officer.

Damage to the existing berm and dune is held to the minimum possible.

Adequate control is provided to prevent unnecessary loss of material by seaward flow of pipeline effluent.

The pipeline is periodically inspected for leakage as specified.

All joints of pipe for discharge line are tight and sound.

Plan addressing the use and removal of construction stakes. The plan shall include the proposed material to be used for the construction stakes and a proposed accounting method for inventorying the stakes. A daily log of those stakes deployed and removed shall be maintained by the Contractor and submitted to the Contracting Officer.

A copy of these quality control records, as well as the records of corrective action taken will be furnished the Government as directed by the Contracting Officer.

-- End of Section --

Table 1 - Estimated Beach Fill Quantities for Bald Head Island South Beach

		In Place Fill Volume (CY)			Borrow Area Measure (CY)	
Baseline		Incremental	Cumulative		Incremental	Cumulative
STA		Volume	Volume		Volume	Volume
46+00		0	0		0	0
48+00		4,960	4,960		5,835	5,835
52+00		27,098	32,058		31,880	37,715
56+00		53,282	85,340		62,685	100,400
60+00		82,061	167,401		96,542	196,942
64+00		66,610	234,011		78,365	275,307
68+00		55,393	289,404		65,168	340,475
72+00		65,738	355,142		77,339	417,814
76+00		67,741	422,883		79,695	497,509
80+00		69,607	492,490		81,891	579,400
84+00		90,498	582,988		106,468	685,868
88+00		73,919	656,907		86,964	772,832
92+00		56,107	713,014		66,008	838,840
96+00		55,253	768,267		65,004	903,844
100+00		52,265	820,532		61,488	965,332
104+00		42,757	863,289		50,302	1,015,634
108+00		37,478	900,767		44,092	1,059,726
112+00		40,337	941,104		47,455	1,107,181
116+00		42,161	983,265		49,601	1,156,782
120+00		41,199	1,024,464		48,469	1,205,252
124+00		40,434	1,064,898		47,569	1,252,821
128+00		40,563	1,105,461		47,721	1,300,542
132+00		37,386	1,142,847		43,984	1,344,526
136+00		36,959	1,179,806		43,481	1,388,007
140+00		36,583	1,216,389		43,039	1,431,046
144+00		39,714	1,256,103		46,722	1,477,768
148+00		36,163	1,292,266		42,545	1,520,313
152+00		37,715	1,329,981		44,371	1,564,684
156+00		39,465	1,369,446		46,429	1,611,113
160+00		33,387	1,402,833		39,279	1,650,392
164+00		31,167	1,434,000		36,667	1,687,059
165+00		1,655	1,435,655		1,947	1,689,006

(Revised by Amendment No.0002)

The seaward edge of the 8-foot construction berm is measured from the Corps of Engineers Baseline.

COE Baseline Station	90 Degree Offset Dist. (ft)	COE Baseline Station	90 Degree Offset Dist. (ft)	COE Baseline Station	90 Degree Offset Dist. (ft)
46+00.00	144	95+00.00	244	144+00.00	298
47+00.00	151	96+00.00	247	145+00.00	301
48+00.00	158	97+00.00	254	146+00.00	306
49+00.00	164	98+00.00	263	147+00.00	312
50+00.00	170	99+00.00	267	148+00.00	317
51+00.00	177	100+00.00	265	149+00.00	322
52+00.00	183	101+00.00	263	150+00.00	328
53+00.00	197	102+00.00	265	151+00.00	333
54+00.00	211	103+00.00	272	152+00.00	338
55+00.00	224	104+00.00	278	153+00.00	344
56+00.00	222	105+00.00	284	154+00.00	346
57+00.00	257	106+00.00	290	155+00.00	346
58+00.00	284	107+00.00	296	156+00.00	346
59+00.00	305	108+00.00	302	157+00.00	346
60+00.00	298	109+00.00	308	158+00.00	343
61+00.00	292	110+00.00	315	159+00.00	336
62+00.00	286	111+00.00	321	160+00.00	330
63+00.00	280	112+00.00	327	161+00.00	285
64+00.00	273	113+00.00	326	162+00.00	240
65+00.00	268	114+00.00	323	163+00.00	195
66+00.00	262	115+00.00	321	164+00.00	150
67+00.00	257	116+00.00	318	165+00.00	105
68+00.00	252	117+00.00	315		
69+00.00	245	118+00.00	313		
70+00.00	244	119+00.00	310		
71+00.00	243	120+00.00	307		
72+00.00	242	121+00.00	305		
73+00.00	241	122+00.00	302		
74+00.00	243	123+00.00	299		
75+00.00	245	124+00.00	297		
76+00.00	247	125+00.00	294		
77+00.00	249	126+00.00	291		
78+00.00	251	127+00.00	289		
79+00.00	253	128+00.00	286		
80+00.00	255	129+00.00	283		
81+00.00	257	130+00.00	281		
82+00.00	258	131+00.00	278		
83+00.00	260	132+00.00	275		
84+00.00	244	133+00.00	274		
85+00.00	240	134+00.00	275		
86+00.00	235	135+00.00	277		
87+00.00	230	136+00.00	278		
88+00.00	227	137+00.00	280		
89+00.00	229	138+00.00	282		
90+00.00	231	139+00.00	285		
91+00.00	233	140+00.00	287		
92+00.00	235	141+00.00	290		
93+00.00	238	142+00.00	293		
94+00.00	241	143+00.00	296		

(Revised by Amendment No.0002)